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ABSTRACT

"New Things Considered" reports on emerging trends and issues in education to policymakers and participants in SEDL-SCAN, an emerging issues tracking system being pilot tested by the Southwest Educational Development Laboratory's Policy Information Service and the State of New Mexico. This issue presents brief summaries of the thinking of SEDL-SCAN analysts on topics related to the impact of the expansion of technology on today's courses and instructional systems. One concern expressed is that little tends to be abandoned in the curriculum, and that usually new topics are simply added on; the analysts feel that it is time instead to change the way some subjects are taught. Implications of technological advancement on the curriculum are briefly discussed, and the launching of the Las Cruces (New Mexico) Public Schools Environmental Scanning Project is announced. Additional trends and/or events that are noted focus on the implications of changes in the way educators think about learning for the construction of schools, libraries, museums, and public parks; a project to initiate the development of national teaching standards: more international challenges for U.S. schools from proposed new standards for European school systems; the ability of computer users to enter computer-generated worlds called virtual reality; and the current slowing of world population growth. (DB)

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What Curriculum For The 21st Century?

New Things Considered: Trends and Issues
In Education

Number 6
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New Things Considered
Trends and Issues in Education

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WHAT CURRICULUM FOR THE 21ST CENTURY?

Are today's courses and instructional systems outdated by the expansion of technology?

If computers and calculators can be used to solve mathematical problems, is it necessary to teach kids basic operations? Is it possible to teach mathematics without practice in calculation? Is it necessary to teach kids how to spell and write grammatically correct sentences if they can use their computers to check their spelling and grammar?

SEDL•SCAN analysts continued an earlier discussion of the impact of today's rapid technological advances on the fundamentals of education (see *New Things Considered,* Number 3) such as the future of the content and delivery of basic skills. For example, with the advent of speech recognition equipment, will it soon be necessary to teach students writing at all?

Recent SEDL•SCAN scanner surveys indicate that there is no easy solution to the dilemma faced by a large system with a long history of doing things in a prescribed way when the external world is changing too fast. Indeed, there is every indication that technology will continue to advance at least at the current rate. A few educators are beginning to raise the question, "How do we prepare teachers if the traditional capabilities and applications will no longer be necessary, and we do not know which types of knowledge will be needed instead?"

The changes have happened so fast that relatively few teachers and teacher educators have had opportunity to become comfortable with using computers, much less other technologies. Consequently there are few effective staff development programs to help teachers create ways to integrate technology into the curriculum. Industry observers predict that more teacher educators are attaining proficiency, and that over the next few years staff development programs should begin to emerge. It may not be possible to predict the impact of technology on education until educators in general come to understand the technological options available to them.

The Analysts' Concerns

The SEDL•SCAN and Las Cruces analysts (see article on page 2) feel that while subjects of the past are not the subjects of the future, the two will not be unrelated; for example, reading and writing skills instruction will be subsumed under units in communication skills. In the opinion of one analyst, educators will continue to teach the same skills, perhaps in different fashion, e.g., through technology, but essentially "we continue teaching what we teach despite what we call it."

However, the analysts are concerned that little tends to be abandoned in the curriculum, and that usually new topics are simply added on. They feel it is time instead to change the way some subjects are taught. One suggested that, if teachers want to help children develop skill in critical thinking and problem solving rather than only in basic calculations, they could use calculators to teach concepts such as the square root. Using technology to perform lower level

About SEDL•SCAN

ED-AIDE, The Southwest Educational Development Laboratory's policy information service, and the State of New Mexico are pilot testing SEDL•SCAN, an emerging issues tracking system. Similar to the systems used by industry and government for early identification of important issues, SEDL•SCAN systematically scans and analyzes a broad spectrum of information.

New Things Considered reports the emerging trends and issues to policymakers and SEDL•SCAN participants. Other SEDL•SCAN and **ED-AIDE** publications include *Insights*, issue briefs, trends analyses, and reports developed on request.

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computation would allow students to focus on the higher level skills.

The analysts are also concerned about the workplace and educators' lack of clarity about the knowledge and skills that students will need in their future jobs. On the one hand some feel that schools should focus on the basic skills so that students have a foundation for continued learning. On the other hand there may not be a clear distinction between basic and advanced skills, and unless schools improve student performance in all skills, say the analysts, "America is going to be left behind. [And, as a nation] we want to keep on playing the winning game that we're used to playing."

Implications

The analysts feel it is time that we take stock of what we really need to be able to play "the game," and that perhaps it is time to raise some complex and potentially "loaded" questions about the place of basic skills in the curriculum. For example, the analysts contemplate the development of a model of education based on the idea that there are different kinds of intelligences. Such an approach would seek to answer the question whether all students need to be taught the same set of skills in the same way.

Today educators are successfully using individualized instruction to meet students' various learning needs and speeds—is it possible to determine, equitably and objectively, who among a group of students might benefit from knowing how to derive a square root with or without a computer or calculator? Or, ask the analysts, instead of trying to do it all, teaching traditional subjects as well as those made necessary by the information age, could the basic curriculum of the future consist of the skills needed by students to cope with rapid change?

Abstracts: 15:0590; 17:0590; 22:0590; 36:0590; 37:90; 38:0590; 40:0590

As SEDL•SCAN Ends:

Launching the Las Cruces Public Schools Environmental Scanning Project

As part of Superintendent Jesse Gonzales's desire that the Las Cruces Public Schools be prepared for the future, district and community leaders have joined in the effort to launch a district-wide environmental scanning and strategic planning effort. With the superb organizational skills of Associate Superintendent Frances Stevens, the Las Cruces effort holds great promise for successfully linking the schools with the specific needs of the local community.

Like the SEDL•SCAN system that inspired it, the Las Cruces project consists of three committees: (1) scanners who systematically survey news sources for indications of change; (2) analysts who systematically analyze this information for local implications; and (3) the members of the strategic planning committee who use the resulting insights to establish goals and plan strategies for the future.

The participants at the May 22, 1990 meeting were:

- SEDL•SCAN analysts: Helen Harriger, John Thorpe, Catherine Smith, JoAnne Young, and Frances Stevens
- Joyce Aranda, Advanced Educational Placement Facilitator, Las Cruces School District
- Dolores Archuleta, White Sands Missile Range
- Graciela Chavez, Bilingual Program, Las Cruces School District
- Donnie Gonzales, Provost, Doña Anna Branch College
- Charlotte Greenfield, Attorney in Las Cruces
- Mack Haley, Regional Director, U.S. West
- Don Howell, Principal, Mesilla Elementary School
- Elaine Jarchow, Chairperson, Department of Curriculum & Instruction, New Mexico State University
- Pat Lamb, Vice President, First National Bank
- Tommy Lucero, Master Teacher Program, New Mexico State University
- Rory Measure, President AAUW
- Jerry Melder, Principal, Highland Elementary School
- Olivia Ogas, Vice Principal, Vista Middle School
- Earl Phillips, Director, Instructional Support Center, Las Cruces School District
- Cynthia Risner-Schiller, Master Teacher Program, New Mexico State University
- J. Paul Taylor, State Representative
- Bonnie Votaw, Director, Secondary Curriculum, Las Cruces School District

ON THE HORIZON

Learning at the bus stop. Changes in the way educators think about learning may lead to changes in the way we construct schools, libraries, museums, and public parks. This new direction is based on the recognition that student learning is not confined to the classroom. Technology can be used to incorporate learning and information environments in new contexts like playgrounds and bus stops. These new designs may appeal to students' sense of the fantastic by using provocative structural designs to entice students to inspect the built-in machines. For example, a playground may include a structure that provides students with the simulated experience of burrowing into the ground to discover the earth's hidden mysteries.

Toward national teaching standards. The National Board for Professional Teaching has released a draft proposal for a $1.3 million contract calling for the creation of an assessment development laboratory that would begin to develop measurements of the skills involved in teaching language arts to early adolescents. The board expects that these activities will help in the creation of a generalist certificate for teachers of early adolescents.

More international challenges for American schools. Just as the trend of comparing the American school system with the Japanese system is subsiding, proposed new standards for the European school systems may cause another round of comparisons. The European Roundtable of Industrialists has proposed that all European students be required to demonstrate fluency in three languages before they may graduate.

Virtual reality — beyond imagination. Computer users will soon be able to enter computer-generated worlds called virtual reality. For example, architects may design buildings on computers, "enter" them, and move around as if they were actual three-dimensional structures. To enter the building, the architect dons a full-body "data suit" covered with fiber-optic sensors that read the motions of the wearer and translate them into movements on the computer. She also wears goggles that place miniature computer screens directly in front of the user's eyes. Once in this virtual reality, the architect sees in all directions and can touch objects — like opening and closing windows. NASA is studying the use of virtual reality for use in outer-space construction and repair. Another potential application is in medical surgery: using a micro-robot under the guidance of a human surgeon who "sees" the insides of a patient.

World population growth slows. The world's population growth is expected to slow .3% over the next decade, falling from the current 1.8% to 1.5% by the year 2000. However, even with a reduction in growth, the total population will still increase by a billion people during each of the next three decades. By the year 2020 over 80% of the planet's population will live in developing nations. Further projections by the U.N. Population Reference Bureau suggest that if mortality continues to decline and current family-planning programs continue to lower fertility, the world's population could stop growing after reaching about 10-11 billion people in the latter half of the next century. If fertility declines at a faster pace, world population growth could halt in the year 2040 at 8 billion. But if fertility declines at a slower pace the population will not stop growing until the year 2130, with 14 billion people.

Computer Products Information Available

The Educational Products Information Exchange (EPIE) Institute has compiled a detailed report on integrated learning systems (ILS) that includes information on ILS vendors, program descriptions, courseware evaluations, and visits to implementing sites. In addition, the report contains essays from leaders in educational technology, including Dr. Paul Resta, member of the New Mexico SEDL•SCAN Analysis Committee.

For more information write to EPIE, P.O. Box 839, Water Mill, NY 11976, or call (516) 283-4922.

New Things Considered reports on the activities of SEDL•SCAN, a component of ED-AIDE, the Southwest Educational Development Laboratory's Policy Information Service. All information referenced in this publication is available upon request. For more information contact Magdalena Rood or Joyce Pollard, Southwest Educational Development Laboratory, 211 E. 7th Street, Austin, Texas, 78701, (512) 476-6861, SourceMail TF0260.

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TO THE SEDL•SCAN ANALYSTS AND SCANNERS

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» Helen Harriger, New Mexico Phi Delta Kappa
» Susan Holderness, The New Mexico Research and Study Council
» Tamra Ivy, New Mexico Community Education Association
» Bryan McOlash, The Legislative Education Study Committee
» John Mitchell, New Mexico Federation of Teachers
» Alfonso Ortiz, Highlands University
» Paul Resta, University of New Mexico
» Abad Sandoval, Los Alamos National Laboratory
» Bill Simpson, New Mexico Commission on Higher Education
» Catherine Smith, New Mexico State Board of Education
» John Thorpe, New Mexico State Budget Division, Governor's Office
» JoAnne Young, Hurley School District

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